

## Short report

# Necropsies in HIV medicines

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**Objective:** The objective of this study was to determine the availability of necropsy services to departments dealing with HIV positive patients, and to assess their satisfaction with, and utilisation of, these services.

**Method:** Confidential questionnaires were sent to 187 consultants in genitourinary medicine and infectious diseases departments within the United Kingdom and Ireland. One hundred and forty four (77%) replies were suitable for analysis.

**Results:** Seventy five (52.1%) centres had a routine necropsy service, compared with 59 (41.0%) which did not, including 15 (10.4%) with no service provision. Sixty one (42.4%) centres were satisfied with their current service; however, 31 (21.5%) clinics were not satisfied. The majority of service users considered necropsies to be beneficial in the subsequent management of HIV positive patients.

**Conclusion:** The provision of services for HIV necropsies varies considerably. We advocate that they should be uniformly available, and that the dissatisfaction with current services should be addressed.

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Keywords: necropsy; HIV; AIDS

## Introduction

The necropsy examination fulfils a number of important duties of medicine to society by advancing medical knowledge, providing definitive diagnoses, and allowing a quality assessment of the standard of medicine practised.<sup>1,2</sup> Necropsy rates on human immunodeficiency virus (HIV) positive individuals in the United States have fallen<sup>3</sup> despite their usefulness,<sup>3,4</sup> and the lack of evidence regarding HIV transmission to staff from known positive cadavers.

The objective of this study was to determine the availability of necropsy services to departments dealing with HIV positive patients in the United Kingdom, and to assess their satisfaction with, and utilisation of, these services.

## Methods

A confidential questionnaire consisting of closed questions with Likert rating scales, and free text for additional comments, was sent to 177 genitourinary medicine (GUM) consultants (one in each GUM clinic in the United Kingdom and Ireland) and to 10 infectious diseases (ID) consultants. Non-responders received a further questionnaire at 6 weeks.

Statistical analysis was performed with  $\chi^2$  test or Fisher's exact test, with odds ratios (OR) and Cornfield 95% confidence intervals (CI) where appropriate, using the EPI INFO statistical package.

## Results

A total of 147 (78.6%) questionnaires were returned; 130 (88.4%) from GUM, 10 (6.8%) from ID, and seven (4.8%) from other services, of which 144 were suitable for analysis.

Seventy five (52.1%) centres had routine access to necropsy services, 59 (41.0%) had no routine access, and 10 (6.9%) centres did not reply (all GUM clinics providing only an outpatient service). Of those with routine access, 63 (84%) stated that this was available within their own trust, 11 (14.7%) through another trust, and one centre through both. Of those with no routine access, 32 (54.2%) centres made individual arrangements (local trusts, coroners, medicolegal centres, neuro-surgical centres), while 15 (25.4%) centres (all GUM clinics in district general hospitals) had no access whatsoever to any service (that is, 10.4% of all respondents). Teaching hospitals were significantly more likely to have a routine necropsy service than other centres (table).

Respondents cared for 15 168 HIV positive patients, with 1404 deaths in the preceding 12 months. Centres with routine access to necropsy services cared for 69.7% of the patients, with an average of 151 patients per centre (SD 270), but dealt with only 58.6% of the deaths.

Eighty one (56.3%) centres requested necropsies, at least sometimes, and requests were significantly greater in the presence of a routine service (table), especially if provided within their own trust. Median necropsy rates from ranked data were 10% if routine service from own trust, 5% from another trust, and 1% with individual arrangement.

In those centres which had access to some form of service ( $n = 107$ ), the commonest reasons for failure to obtain a necropsy were "not requested/dealt with elsewhere" (29.9%), "requested but no consent given" (20.6%), "not routine policy" (18.7%), "patients ante-mortem wishes" (6.5%), and "problems with necropsy service" (6.5%).

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*Analysis of variables affected by routine necropsy service*

Variable	Category	Respondents (%)	Routine service	p Value	Odds ratio (CI)
Type of hospital	Non-teaching	107 (76.4)	48	0.022	0.4
	Teaching	37 (26.4)	25		(0.2–1.0)
MRC trial involvement	Yes	45 (31.3)	31	0.0065	2.8
	No	99 (68.7)	44		(1.2–6.3)
Frequency of request for necropsy	Always	9 (6.3)	8	0.00017	
	Often	10 (6.9)	9		
	Sometimes	62 (43.1)	39		
	Never	46 (31.9)	15		
Problems encountered	Never	50 (34.7)	44	< 0.0001	9.9
	At times	47 (32.6)	20		(3.3–33.2)
Type of problem	Enthusiasm	24 (16.7)	10	0.022	
	Technical staff	19 (13.2)	7		
	Equip/facilities	19 (13.2)	1		
Satisfaction with necropsy service	Yes	61 (42.4)	54	< 0.0001	40.1
	No	31 (21.5)	5		(10.2–170)

Fourteen (9.7%) centres “always” experienced problems in obtaining a necropsy following consent, seven (4.9%) “often”, 26 (18.1%) “sometimes”, and 50 (34.7%) “never”. There is a significant association between encountering problems and the lack of a routine necropsy service (table), as would be expected. Analysis of the type of problem encountered against the type of necropsy service available was significant (table). The trend was for poor enthusiasm in senior pathologists/technical staff in those centres with a routine service, but for some equipment/facilities problems in those with no routine service. Four other problems recorded by free text (but not included in analysis owing to their heterogeneous nature) were “time required to arrange necropsies”, “the unwillingness of pathology staff”, “risk of penetrating injury”, and “transportation of bodies”.

Sixty four (44.4%) respondents felt that their departments should perform more necropsies, 31 (21.5%) felt their rate was adequate, and only three (2.1%) felt too many necropsies were being performed. Thirty one (21.5%) centres entered free text regarding the quantity of necropsies performed at their centre. All those suggesting more necropsies gave their reasons as either identification of cause of death on a deceased individual (patient based approach,  $n = 9$ ), or increased understanding of the natural history of HIV to improve future management (society based approach,  $n = 17$ ). The only respondent suggesting a reduction in the number of necropsies discussed problems with their local pathology service.

Those centres with access to a necropsy service ( $n = 107$ ) were asked whether management was altered on subsequent patients following their results: three (2.8%) centres replied “always”, 17 (15.9%) “often”, 54 (50.5%) “sometimes”, and only six (5.6%) “never”.

All 17 (11.8%) centres that were “very satisfied” with their necropsy service had routine access. Forty four (30.6%) were “satisfied”, and 31 (21.5%) were “not satisfied”. Those with a routine necropsy service were significantly more satisfied than those without a routine service (table). As expected, dissatisfaction was more likely in those centres that often/always encountered problems in obtaining a necropsy, compared with those centres who sometimes/never encountered problems ( $p < 0.0001$  OR 59.1 [CI 10.6–561.5]).

Thirty three of the 47 centres with necropsy service problems commented on the main hurdles to be overcome before higher necropsy rates could be achieved. These referred to the pathologist/technicians themselves ( $n = 26$ ), inadequate facilities, funding difficulties, ethnic/religious objections, difficulties in broaching the subject with relatives, and insufficient numbers to maintain expertise.

### Discussion

Although some bias in this paper may have arisen from the failure to obtain information from all those concerned with HIV care, the response rate was high (78%), and we estimate that these centres account for approximately 75% of HIV positive patients in the United Kingdom.

We did not ascertain whether a routine necropsy was available for other specialties, or whether necropsies were more difficult to obtain on HIV positive patients; however, we have shown that the availability of necropsy services in centres dealing with HIV positive patients is disparate with 41% having no routine service (including 31% of those MRC Concorde/Delta trial centres who replied), and 10% no service provision at all. We have also shown that over 20% of centres were not satisfied with their necropsy service.

Our data suggest that the threshold for requesting a necropsy is lower in those centres with routine service provision, and that many centres would prefer to perform more necropsies, although we did not ask whether more necropsies would actually be requested if a routine service existed. Similar to other studies,<sup>4,5</sup> 69% of respondents believed that necropsy examinations are beneficial in the subsequent management of some patients.

Shepherd suggests that the use of inadequate mortuary facilities should cease for all necropsy examinations until facilities are upgraded, or alternative services are identified who can deal appropriately with the demand for high risk necropsies.<sup>6</sup> Geller argues that the greatest threat of occupational exposure is not facilities but “the pathologist’s own lack of regard” for potential risks of infection.<sup>7</sup> Prevalence studies at medicolegal necropsies have shown that, although rates are low,<sup>8</sup> previously undiagnosed HIV positive patients have been identified,<sup>9</sup> indicating that universal precautions must be employed during all necropsies.

Necropsy services for HIV infection vary considerably, even in hospitals of the same type. We advocate that they should be uniformly available for HIV infected individuals, thus avoiding discrimination even in death and improving the care of future patients, and that the widespread dissatisfaction with current services should be addressed.

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